

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for preparing a monohydroperfluoroalkane, bis(perfluoroalkyl)phosphinate or perfluoroalkylphosphonate
~~Process for the preparation of monohydroperfluoroalkanes, bis(perfluoroalkyl)phosphinates and perfluoroalkylphosphonates, comprising treating a at least the treatment of at least one~~
perfluoroalkylphosphorane with ~~at least one base~~

a) an alkaline earth metal hydroxide,

b) an organometallic compound, or

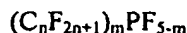
c) an organic base,

and optionally treating with and, if desired, an acid in a suitable reaction medium.

2. (Cancelled)

2 3. (Currently Amended) A process ~~Process for the preparation of~~
~~bis(perfluoroalkyl)phosphinates and perfluoroalkylphosphonates according to Claim 1,~~
~~characterised in that at least one wherein the~~ perfluoroalkylphosphorane is reacted with an
alkaline earth metal hydroxide in a at least one inorganic base (b) in a suitable solvent, the
resultant bis(perfluoroalkyl)phosphinates and perfluoroalkylphosphonates formed in addition
to the monohydroperfluoroalkanes are converted into the corresponding bis(perfluoro-
alkyl)phosphinic acids and perfluoroalkylphosphonic acids directly or after isolation by salt
interchange or subsequent treatment with an acid, ~~preferably sulfuric acid, and the salts are~~
obtained by subsequent neutralisation, ~~preferably using organic bases (c).~~

3 4. (Currently Amended) A process ~~Process~~ according to Claim 1, wherein
~~characterised in that the~~ perfluoroalkylphosphorane employed is a compound of the general
formula I



in which $1 \leq n \leq 8$, ~~preferably $1 \leq n \leq 4$~~ , and m in each case denotes 1, 2 or 3.

4⁵. (Currently Amended) A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the perfluoroalkylphosphorane is ~~selected from the group consisting of~~ difluorotris(pentafluoroethyl)phosphorane, difluorotris(n-nonafluorobutyl)phosphorane, difluorotris(n-heptafluoropropyl)phosphorane or ~~and~~ trifluorobis(n-nonafluorobutyl)phosphorane.

6. (Cancelled)

5¹¹. (Currently Amended) A process ~~Process~~ according to Claim 1 6, wherein ~~characterised in that~~ the organic base(s) ~~is (are)~~ base is selected from ~~the group consisting of~~ alkylammonium hydroxides, arylammonium hydroxides, alkylaryl ammonium hydroxides, alkylphosphonium hydroxides, arylphosphonium hydroxides, alkylarylphosphonium hydroxides alkylamines, arylamines, alkylaryl amines, alkylphosphines, arylphosphines and alkylarylphosphines.

8. (Cancelled).

9. (Cancelled)

10. (Cancelled)

6¹¹. (Currently Amended) A process ~~Process~~ according to Claim 1 9, wherein ~~characterised in that~~ the alkaline earth metal hydroxide is ~~selected from the group consisting of~~ barium hydroxide, barium hydroxide octahydrate or ~~and~~ calcium hydroxide.

7¹². (Currently Amended) A process ~~Process~~ according to Claim 1 2, wherein ~~characterised in that~~ the organometallic compound is ~~compounds are~~ selected from ~~the group consisting of~~ metal alkoxides, ~~preferably~~ alkali metal alkoxides, metal aryloxides, metal alkylthiooxides, metal arylthiooxides, alkylmetal compounds, arylmetal compounds and Grignard reagents.

8¹³. (Currently Amended) A process ~~Process~~ according to Claim 1, wherein

~~characterised in that~~ the reaction medium is water, ~~if desired~~ optionally mixed with one or more organic solvents.

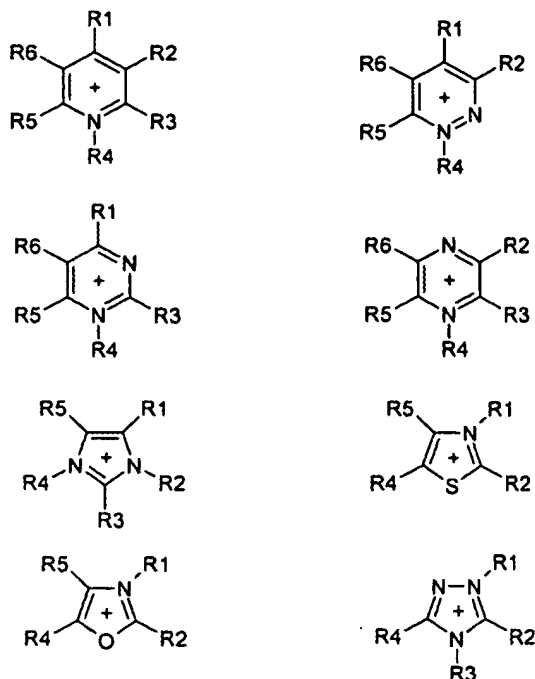
⁹ 14. (Currently Amended) A process ~~Process~~ according to Claim 1, wherein
~~characterised in that~~ the reaction medium ~~employed~~ is one or more organic solvents.

⁸
¹⁰ 15. (Currently Amended) A process ~~Process~~ according to Claim ⁸13, wherein
~~characterised in that~~ the organic solvent is selected from ~~the group consisting of~~ alcohols,
ethers, acylamides, sulfoxides, sulfones, nitriles and hydrocarbons.

¹⁰
¹¹ 16. (Currently Amended) A process ~~Process~~ according to Claim ¹⁰15, wherein
~~characterised in that~~ the alcohol has ~~from~~ one to four carbon atoms in ~~the an~~ an alkyl moiety and
~~is preferably selected from the group consisting of~~ methanol, ethanol, isopropanol and
~~mixtures of at least two of these alcohols.~~

¹² 17. (Currently Amended) ~~Perfluoroalkylphosphonates and~~
~~bis(perfluoroal)kylphosphinates~~ A perfluoroalkylphosphonate or
bis(perfluoroal)kylphosphinate selected from ~~the group consisting of~~ partially alkylated and
peralkylated ~~ammonium~~, phosphonium, sulfonium, pyridinium, pyridazinium, pyrimidinium,
pyrazinium, imidazolium, pyrazolium, thiazolium, oxazolium and triazolium salts ~~salts~~.

¹³ 18. (Currently Amended) ~~Perfluoroalkylphosphonates and~~
~~bis(perfluoroal)kylphosphinates~~ A perfluoroalkylphosphonate or
bis(perfluoroal)kylphosphinate according to Claim ¹²16, ~~having a cation selected from the~~
~~group consisting of~~



where R^1 to R^6 are identical or different, are optionally bonded directly to one another via a single or double bond and are each, individually or together, defined as follows:

- H,
- halogen, where the halogens are not bonded directly to N,
- an C_1 to C_8 alkyl radical (C_1 to C_8), which may be partially or completely substituted by further groups, preferably F, Cl, $N(C_nF_{(2n+1-x)}H_x)$, $O(C_nF_{(2n+1-x)}H_x)$, $SO_2(C_nF_{(2n+1-x)}H_x)$, $C_nF_{(2n+1-x)}H_x$, where $1 < n < 6$ and $0 < x \leq 2n+1$.

14 19. (Currently Amended) Use of the perfluoroalkylphosphonates and bis(perfluoroalkyl)phosphinates according to Claim 17 as An ionic liquid comprising a perfluoroalkylphosphonate or bis(perfluoroalkyl)phosphinate according to claim 17 liquids.

12

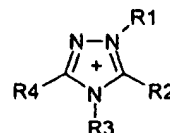
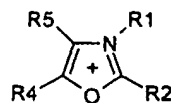
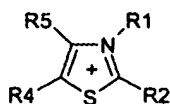
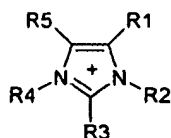
15 20. (Currently Amended) Use of the perfluoroalkylphosphonates and bis(perfluoroalkyl)phosphinates according to Claim 17 as A phase-transfer catalyst or surfactant comprising a perfluoroalkylphosphonate or bis(perfluoroalkyl)phosphinate according to claim 17 surfactants.

12

~~16~~ ²¹ (New) ¹³ A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim ~~16~~, where R^1 to R^6 are identical or different, are optionally bonded directly to one another via a single or double bond and are each, individually or together, defined as follows:

- H,
- halogen, where the halogens are not bonded directly to N, or
- an C_1 to C_8 alkyl radical, which may be partially or completely substituted by F, Cl, $N(C_nF_{(2n+1-x)}H_x)_2$, $O(C_nF_{(2n+1-x)}H_x)$, $SO_2(C_nF_{(2n+1-x)}H_x)$, $C_nF_{(2n+1-x)}H_x$, where $1 < n < 6$ and $0 < x \leq 2n+1$.

~~17~~ ²² (New) ¹³ A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim ~~17~~, having a cation selected from



~~18~~ ²³ (New) ¹⁷ A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim ~~22~~, where R^1 to R^5 are identical or different, are optionally bonded directly to one another via a single or double bond and are each, individually or together, defined as follows:

- H,
- halogen, where the halogens are not bonded directly to N, or
- an C_1 to C_8 alkyl radical, which may be partially or completely substituted by F, Cl, $N(C_nF_{(2n+1-x)}H_x)_2$, $O(C_nF_{(2n+1-x)}H_x)$, $SO_2(C_nF_{(2n+1-x)}H_x)$, $C_nF_{(2n+1-x)}H_x$, where $1 < n < 6$ and $0 < x \leq 2n+1$.

~~19~~ ²⁴ (New) A process according to Claim 4, in which $1 \leq n \leq 4$.

²⁰
25. (New) A process according to Claim ¹⁰~~16~~, wherein the alcohol is methanol, ethanol, isopropanol or a mixture thereof.

²¹
26. (New) A process according to claim 1, wherein a perfluoroalkylphosphonate is obtained.

²²
27. (New) A process according to claim 1, wherein a bis(perfluoroalkyl)phosphinate is obtained.

²³
28. (New) A process according to claim 1, wherein a monohydroperfluoroalkane is obtained.